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  * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 09:48:48 ON 29 SEP 2003

=> fil .bec
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

FILES 'MEDLINE, SCISEARCH, LIFESCI, BIOTECHDS, BIOSIS, EMBASE, HCAPLUS, NTIS,
       ESBIOBASE, BIOTECHNO, WPIDS' ENTERED AT 09:49:13 ON 29 SEP 2003
ALL COPYRIGHTS AND RESTRICTIONS APPLY.  SEE HELP USAGETERMS FOR DETAILS.

11 FILES IN THE FILE LIST

=> s chitinase# or chitotriosidase#
FILE 'MEDLINE'
          1589 CHITINASE#
            70 CHITOTRIOSIDASE#
L1        1635 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'SCISEARCH'
          3172 CHITINASE#
           104 CHITOTRIOSIDASE#
L2        3226 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'LIFESCI'
          1519 CHITINASE#
             8 CHITOTRIOSIDASE#
L3        1520 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'BIOTECHDS'
           955 CHITINASE#
             3 CHITOTRIOSIDASE#
L4         957 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'BIOSIS'
          3703 CHITINASE#
            87 CHITOTRIOSIDASE#
L5        3768 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'EMBASE'
          1189 CHITINASE#
            57 CHITOTRIOSIDASE#
L6        1220 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'HCAPLUS'
          4451 CHITINASE#
            59 CHITOTRIOSIDASE#
L7        4483 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'NTIS'
            30 CHITINASE#
             0 CHITOTRIOSIDASE#
L8           30 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'ESBIOBASE'
          1363 CHITINASE#
            43 CHITOTRIOSIDASE#
L9        1388 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'BIOTECHNO'
          1368 CHITINASE#
            34 CHITOTRIOSIDASE#
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L10       1383 CHITINASE# OR CHITOTRIOSIDASE#

FILE 'WPIDS'
           443 CHITINASE#
             6 CHITOTRIOSIDASE#
L11        447 CHITINASE# OR CHITOTRIOSIDASE#

TOTAL FOR ALL FILES
L12      20057 CHITINASE# OR CHITOTRIOSIDASE#

=> s l12(5a)human
FILE 'MEDLINE'
       8228924 HUMAN
L13          41 L1 (5A)HUMAN

FILE 'SCISEARCH'
       1053783 HUMAN
L14          47 L2 (5A)HUMAN

FILE 'LIFESCI'
        325578 HUMAN
L15          21 L3 (5A)HUMAN

FILE 'BIOTECHDS'
         57980 HUMAN
L16          14 L4 (5A)HUMAN

FILE 'BIOSIS'
       5527791 HUMAN
L17          58 L5 (5A)HUMAN

FILE 'EMBASE'
       4812455 HUMAN
L18          34 L6 (5A)HUMAN

FILE 'HCAPLUS'
       1177886 HUMAN
L19          75 L7 (5A)HUMAN

FILE 'NTIS'
         81711 HUMAN
L20           0 L8 (5A)HUMAN

FILE 'ESBIOBASE'
        364239 HUMAN
L21          30 L9 (5A)HUMAN

FILE 'BIOTECHNO'
        714420 HUMAN
L22          30 L10(5A)HUMAN

FILE 'WPIDS'
        129733 HUMAN
L23          12 L11(5A)HUMAN

TOTAL FOR ALL FILES
L24         362 L12(5A) HUMAN

=> s l24 not 1996-1999/py
FILE 'MEDLINE'
       1756369 1996-1999/PY
L25          22 L13 NOT 1996-1999/PY

FILE 'SCISEARCH'
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       3763269 1996-1999/PY
L26          28 L14 NOT 1996-1999/PY

FILE 'LIFESCI'
        453957 1996-1999/PY
L27          12 L15 NOT 1996-1999/PY

FILE 'BIOTECHDS'
         55809 1996-1999/PY
L28           6 L16 NOT 1996-1999/PY

FILE 'BIOSIS'
       2246522 1996-1999/PY
L29          37 L17 NOT 1996-1999/PY

FILE 'EMBASE'
       1633189 1996-1999/PY
L30          19 L18 NOT 1996-1999/PY

FILE 'HCAPLUS'
       3311654 1996-1999/PY
L31          40 L19 NOT 1996-1999/PY

FILE 'NTIS'
        123655 1996-1999/PY
L32           0 L20 NOT 1996-1999/PY

FILE 'ESBIOBASE'
       1019834 1996-1999/PY
L33          17 L21 NOT 1996-1999/PY

FILE 'BIOTECHNO'
        440533 1996-1999/PY
L34          19 L22 NOT 1996-1999/PY

FILE 'WPIDS'
       2892252 1996-1999/PY
L35           5 L23 NOT 1996-1999/PY

TOTAL FOR ALL FILES
L36         205 L24 NOT 1996-1999/PY

=> s l36 not 2000-2003/py
FILE 'MEDLINE'
       1909015 2000-2003/PY
L37           6 L25 NOT 2000-2003/PY

FILE 'SCISEARCH'
       3618526 2000-2003/PY
L38           8 L26 NOT 2000-2003/PY

FILE 'LIFESCI'
        364581 2000-2003/PY
L39           4 L27 NOT 2000-2003/PY

FILE 'BIOTECHDS'
         69861 2000-2003/PY
L40           0 L28 NOT 2000-2003/PY

FILE 'BIOSIS'
       1958938 2000-2003/PY
L41          11 L29 NOT 2000-2003/PY

FILE 'EMBASE'
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      1641316 2000-2003/PY
L42         7 L30 NOT 2000-2003/PY

FILE 'HCAPLUS'
      3615330 2000-2003/PY
L43         7 L31 NOT 2000-2003/PY

FILE 'NTIS'
        59621 2000-2003/PY
L44         0 L32 NOT 2000-2003/PY

FILE 'ESBIOBASE'
      1044616 2000-2003/PY
L45         5 L33 NOT 2000-2003/PY

FILE 'BIOTECHNO'
       445994 2000-2003/PY
L46         6 L34 NOT 2000-2003/PY

FILE 'WPIDS'
      3245206 2000-2003/PY
L47         0 L35 NOT 2000-2003/PY

TOTAL FOR ALL FILES
L48        54 L36 NOT 2000-2003/PY

=> s l12 and antifungal and (human or mammal?)
FILE 'MEDLINE'
        24888 ANTIFUNGAL
      8228924 HUMAN
       130493 MAMMAL?
L49        19 L1 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'SCISEARCH'
        14306 ANTIFUNGAL
      1053783 HUMAN
       141944 MAMMAL?
L50        23 L2 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'LIFESCI'
         8993 ANTIFUNGAL
       325578 HUMAN
        65164 MAMMAL?
L51        10 L3 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'BIOTECHDS'
         1076 ANTIFUNGAL
        57980 HUMAN
        66418 MAMMAL?
L52         3 L4 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'BIOSIS'
        31450 ANTIFUNGAL
      5527791 HUMAN
      4071836 MAMMAL?
L53        23 L5 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'EMBASE'
        22086 ANTIFUNGAL
      4812455 HUMAN
       123802 MAMMAL?
L54        18 L6 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'HCAPLUS'
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```
         22246 ANTIFUNGAL
       1177886 HUMAN
        216329 MAMMAL?
L55          25 L7 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'NTIS'
           128 ANTIFUNGAL
         81711 HUMAN
          7363 MAMMAL?
L56           0 L8 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'ESBIOBASE'
          4383 ANTIFUNGAL
        364239 HUMAN
         68609 MAMMAL?
L57          13 L9 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'BIOTECHNO'
          3794 ANTIFUNGAL
        714420 HUMAN
         54133 MAMMAL?
L58          12 L10 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

FILE 'WPIDS'
          9241 ANTIFUNGAL
        129733 HUMAN
         32946 MAMMAL?
L59          12 L11 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

TOTAL FOR ALL FILES
L60         158 L12 AND ANTIFUNGAL AND (HUMAN OR MAMMAL?)

=> s l60 not 1996-1999/py
FILE 'MEDLINE'
       1756369 1996-1999/PY
L61          16 L49 NOT 1996-1999/PY

FILE 'SCISEARCH'
       3763269 1996-1999/PY
L62          19 L50 NOT 1996-1999/PY

FILE 'LIFESCI'
        453957 1996-1999/PY
L63           9 L51 NOT 1996-1999/PY

FILE 'BIOTECHDS'
         55809 1996-1999/PY
L64           3 L52 NOT 1996-1999/PY

FILE 'BIOSIS'
       2246522 1996-1999/PY
L65          20 L53 NOT 1996-1999/PY

FILE 'EMBASE'
       1633189 1996-1999/PY
L66          16 L54 NOT 1996-1999/PY

FILE 'HCAPLUS'
       3311654 1996-1999/PY
L67          19 L55 NOT 1996-1999/PY

FILE 'NTIS'
        123655 1996-1999/PY
L68           0 L56 NOT 1996-1999/PY
```

```
FILE 'ESBIOBASE'
       1019834 1996-1999/PY
L69          11 L57 NOT 1996-1999/PY

FILE 'BIOTECHNO'
        440533 1996-1999/PY
L70          11 L58 NOT 1996-1999/PY

FILE 'WPIDS'
       2892252 1996-1999/PY
L71           6 L59 NOT 1996-1999/PY

TOTAL FOR ALL FILES
L72         130 L60 NOT 1996-1999/PY

=> s l72 not 2000-2003/py
FILE 'MEDLINE'
       1909015 2000-2003/PY
L73           1 L61 NOT 2000-2003/PY

FILE 'SCISEARCH'
       3618526 2000-2003/PY
L74           2 L62 NOT 2000-2003/PY

FILE 'LIFESCI'
        364581 2000-2003/PY
L75           2 L63 NOT 2000-2003/PY

FILE 'BIOTECHDS'
         69861 2000-2003/PY
L76           0 L64 NOT 2000-2003/PY

FILE 'BIOSIS'
       1958938 2000-2003/PY
L77           1 L65 NOT 2000-2003/PY

FILE 'EMBASE'
       1641316 2000-2003/PY
L78           0 L66 NOT 2000-2003/PY

FILE 'HCAPLUS'
       3615330 2000-2003/PY
L79           1 L67 NOT 2000-2003/PY

FILE 'NTIS'
         59621 2000-2003/PY
L80           0 L68 NOT 2000-2003/PY

FILE 'ESBIOBASE'
       1044616 2000-2003/PY
L81           0 L69 NOT 2000-2003/PY

FILE 'BIOTECHNO'
        445994 2000-2003/PY
L82           0 L70 NOT 2000-2003/PY

FILE 'WPIDS'
       3245206 2000-2003/PY
L83           0 L71 NOT 2000-2003/PY

TOTAL FOR ALL FILES
L84           7 L72 NOT 2000-2003/PY
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=> s l48 or l84
FILE 'MEDLINE'
L85             7 L37 OR L73

FILE 'SCISEARCH'
L86            10 L38 OR L74

FILE 'LIFESCI'
L87             6 L39 OR L75

FILE 'BIOTECHDS'
L88             0 L40 OR L76

FILE 'BIOSIS'
L89            12 L41 OR L77

FILE 'EMBASE'
L90             7 L42 OR L78

FILE 'HCAPLUS'
L91             8 L43 OR L79

FILE 'NTIS'
L92             0 L44 OR L80

FILE 'ESBIOBASE'
L93             5 L45 OR L81

FILE 'BIOTECHNO'
L94             6 L46 OR L82

FILE 'WPIDS'
L95             0 L47 OR L83

TOTAL FOR ALL FILES
L96            61 L48 OR L84

=> dup rem l96
PROCESSING COMPLETED FOR L96
L97            16 DUP REM L96 (45 DUPLICATES REMOVED)

=> d tot

L97  ANSWER 1 OF 16     MEDLINE on STN                  DUPLICATE 1
TI   Cloning of a cDNA encoding chitotriosidase, a human
     chitinase produced by macrophages.
SO   JOURNAL OF BIOLOGICAL CHEMISTRY, (1995 Nov 3) 270 (44) 26252-6.
     Journal code: 2985121R. ISSN: 0021-9258.
AU   Boot R G; Renkema G H; Strijland A; van Zonneveld A J; Aerts J M
AN   96064695     MEDLINE

L97  ANSWER 2 OF 16     MEDLINE on STN                  DUPLICATE 2
TI   Chitinase activity in human serum and leukocytes.
SO   INFECTION AND IMMUNITY, (1995 Dec) 63 (12) 4770-3.
     Journal code: 0246127. ISSN: 0019-9567.
AU   Escott G M; Adams D J
AN   96071897     MEDLINE

L97  ANSWER 3 OF 16     MEDLINE on STN                  DUPLICATE 3
TI   Purification and characterization of human
     chitotriosidase, a novel member of the chitinase family of
     proteins.
SO   JOURNAL OF BIOLOGICAL CHEMISTRY, (1995 Feb 3) 270 (5) 2198-202.
     Journal code: 2985121R. ISSN: 0021-9258.
```

AU Renkema G H; Boot R G; Muijsers A O; Donker-Koopman W E; Aerts J M
AN 95138187 MEDLINE

L97 ANSWER 4 OF 16 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 4
TI POSSIBLE ROLES OF WALL HYDROLASES IN THE MORPHOGENESIS OF COCCIDIOIDES-IMMITIS
SO CANADIAN JOURNAL OF BOTANY-REVUE CANADIENNE DE BOTANIQUE, (1995) Vol. 73, Supp. 1, pp. S1132-S1141.
ISSN: 0008-4026.
AU COLE G T (Reprint); PISHKO E J; SESHAN K R
AN 95:766766 SCISEARCH

L97 ANSWER 5 OF 16 MEDLINE on STN DUPLICATE 5
TI Differential recognition of microfilarial chitinase, a transmission-blocking vaccine candidate antigen, by sera from patients with Brugian and Bancroftian filariasis.
SO AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE, (1995 Sep) 53 (3) 289-94.
Journal code: 0370507. ISSN: 0002-9637.
AU Dissanayake S; Perler F B; Xu M; Southworth M W; Yee C K; Wang S; Dreyer G; Watawana L; Kurniawan L; Fuhrman J A; +
AN 96033016 MEDLINE

L97 ANSWER 6 OF 16 MEDLINE on STN DUPLICATE 6
TI Cloning and expression in Escherichia coli of the nahA gene from Porphyromonas gingivalis indicates that beta-N-acetylhexosaminidase is an outer-membrane-associated lipoprotein.
SO MICROBIOLOGY, (1994 Dec) 140 (Pt 12) 3399-406.
Journal code: 9430468. ISSN: 1350-0872.
AU Lovatt A; Roberts I S
AN 95187310 MEDLINE

L97 ANSWER 7 OF 16 MEDLINE on STN DUPLICATE 7
TI **Human** serum contains a **chitinase**: identification of an enzyme, formerly described as 4-methylumbelliferyl-tetra-N-acetylchitotetraoside hydrolase (MU-TACT hydrolase).
SO GLYCOBIOLOGY, (1994 Dec) 4 (6) 797-803.
Journal code: 9104124. ISSN: 0959-6658.
AU Overdijk B; Van Steijn G J
AN 95252690 MEDLINE

L97 ANSWER 8 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI The cloning and sequencing of two separate **chitinase** genes from the **human** pathogenic fungus Coccidioides immitis.
SO Abstracts of the General Meeting of the American Society for Microbiology, (1994) Vol. 94, No. 0, pp. 589.
Meeting Info.: 94th General Meeting of the American Society for Microbiology Las Vegas, Nevada, USA May 23-27, 1994
ISSN: 1060-2011.
AU Pishko, E. J.; Cole, G. T.
AN 1994:333366 BIOSIS

L97 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2003 ACS on STN
TI Factors regulating morphogenesis in Coccidioides immitis
SO Dimorphic Fungi Biol. Med., [Proc. Symp. Top. Mycol. Fungal Dimorphism], 4th (1993), Meeting Date 1992, 191-212. Editor(s): Vanden Bossche, Hugo; Odds, Frank C.; Kerridge, David. Publisher: Plenum, New York, N. Y.
CODEN: 59QKAY
AU Cole, Garry T.; Kruse, David; Seshan, Kalpathi R.; Pan, Shuchong; Szaniszlo, Paul J.; Richardson, Jon; Bian, Buming
AN 1994:73160 HCAPLUS
DN 120:73160

L97 ANSWER 10 OF 16 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 8

TI EXPRESSION OF A **CHITINASE**-LIKE PROTEIN (C-GP39) IN **HUMAN** ARTICULAR-CARTILAGE AND SYNOVIUM
SO ARTHRITIS AND RHEUMATISM, (SEP 1993) Vol. 36, No. 9, Supp. S, pp. S190. ISSN: 0004-3591.
AU RECKLIES A D (Reprint); BAILLARGEON L; WHITE C
AN 93:640125 SCISEARCH

L97 ANSWER 11 OF 16 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 9
TI THE COCCIDIOIDAL COMPLEMENT-FIXATION AND IMMUNODIFFUSION-COMPLEMENT FIXATION ANTIGEN IS A CHITINASE
SO INFECTION AND IMMUNITY, (JUL 1992) Vol. 60, No. 7, pp. 2588-2592. ISSN: 0019-9567.
AU JOHNSON S M; PAPPAGIANIS D (Reprint)
AN 92:407044 SCISEARCH

L97 ANSWER 12 OF 16 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
TI ISOLATION AND CHARACTERIZATION OF A NOVEL CLASS OF PLANT ANTIMICROBIAL PEPTIDES FROM MIRABILIS-JALAPA L SEEDS
SO JOURNAL OF BIOLOGICAL CHEMISTRY, (05 FEB 1992) Vol. 267, No. 4, pp. 2228-2233. ISSN: 0021-9258.
AU CAMMUE B P A (Reprint); DEBOLLE M F C; TERRAS F R G; PROOST P; VANDAMME J; REES S B; VANDERLEYDEN J; BROEKAERT W F
AN 92:78364 SCISEARCH

L97 ANSWER 13 OF 16 LIFESCI COPYRIGHT 2003 CSA on STN
TI **Antifungal** proteins from plants.
ANTIFUNGAL DRUGS.
SO ANN. N.Y. ACAD. SCI., (1988) pp. 141-151.
Meeting Info.: 1. International Conference on Drug Research in Immunologic and Infectious Diseases. Antifungal Drugs: Synthesis, Preclinical and Clinical Evaluation. Garden City, NY (USA). 8-10 Oct 1987.
AU Roberts, W.K.; Laue, B.E.; Selitrennikoff, C.P.; St. Georgiev, V. [editor]
AN 88:108497 LIFESCI

L97 ANSWER 14 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
TI COMPARATIVE STUDY OF THE PRODUCTION OF DIVERSE ENZYMES FROM 2 STRAINS OF CONIDIOBOLUS-CORONATUS.
SO BOL SOC MEX MICOL, (1981 (RECD 1982)) 0 (16), 5-10.
CODEN: BSMMDY.
AU MIER T; TORIELLO C; CASAMITJANA M; GARCIA MAYNEZ A M; LOPEZ-MARTINEZ R
AN 1983:155942 BIOSIS

L97 ANSWER 15 OF 16 MEDLINE on STN
TI The influence of carbohydrases on the growth of fungal pathogens in vitro and in vivo.
SO POSTGRADUATE MEDICAL JOURNAL, (1979 Sep) 55 (647) 674-6.
Journal code: 0234135. ISSN: 0032-5473.
AU Pope A M; Davies D A
AN 80101245 MEDLINE

L97 ANSWER 16 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 10
TI CHITINASE ACTIVITY AND SUBSTRATE SPECIFICITY OF 3 BACTERIOLYTIC ENDO-BETA-N-ACETYL EC-3.2.1 MURAMIDASES AND ENDO-BETA-N ACETYL GLUCOSAMINIDASE.
SO ACTA CHEM SCAND, (1972) 26 (2), 653-660.
CODEN: ACSAA4. ISSN: 0001-5393.
AU NORD C E; WADSTROM T
AN 1973:102980 BIOSIS

=> d ab tot

L97 ANSWER 1 OF 16 MEDLINE on STN DUPLICATE 1
AB We have recently observed that chitotriosidase, a chitinolytic enzyme, is secreted by activated human macrophages and is markedly elevated in plasma of Gaucher disease patients (Hollak, C. E. M., van Weely, S., van Oers, M. H. J., and Aerts, J. M. F. G. (1994) J. Clin. Invest. 93, 1288-1292). Here, we report on the cloning of the corresponding cDNA. The nucleotide sequence of the cloned cDNA predicts a protein with amino acid sequences identical to those established for purified chitotriosidase. Secretion of active chitotriosidase was obtained after transient transfection of COS-1 cells with the cloned cDNA, confirming its identity as chitotriosidase cDNA. Chitotriosidase contains several regions with high homology to those present in chitinases from different species belonging to family 18 of glycosyl hydrolases. Northern blot analysis shows that expression of chitotriosidase mRNA occurs only at a late stage of differentiation of monocytes to activated macrophages in culture. Our results show that, in contrast to previous beliefs, **human** macrophages can synthesize a functional **chitinase**, a highly conserved enzyme with a strongly regulated expression. This enzyme may play a role in the degradation of chitin-containing pathogens and can be used as a marker for specific disease states.

L97 ANSWER 2 OF 16 MEDLINE on STN DUPLICATE 2
AB Using colloidal [3H] chitin as a substrate, we provide the first demonstration of a **chitinase** in **human** leukocytes; chitinolytic activity in whole and disrupted leukocyte preparations (approximately 0.6 and 5.5 nmol of N-acetylglucosamine [GlcNAc] released min-1 mg of protein-1, respectively) was partially inhibited by the specific chitinase inhibitor allosamidin (9 microM). Following fractionation of the leukocytes, much higher levels of chitinase activity were detected in granulocyte-rich homogenates (approximately 7.2 nmol of GlcNAc released min-1 mg of protein-1) than in lymphocyte- and monocyte-rich homogenates (approximately 0.22 and 0.26 nmol of GlcNAc released min-1 mg of protein-1, respectively). Low levels of **chitinase** activity were detected in **human** serum (approximately 4 pmol of GlcNAc released min-1 mg of protein-1). Chitinolytic activity in granulocyte-rich homogenates and serum was partially inhibited by allosamidin (9 microM). Proteins with chitinolytic activities (approximate molecular masses, 48 and 56 kDa) distinct from lysozyme (14.3 kDa) were detected on polyacrylamide gels following the electrophoresis of human granulocyte-rich preparations. Chitinase activity, detected consistently in serum and leukocytes from all human volunteers investigated, may contribute to the protection of the host by cleaving chitin in the cell walls of fungal pathogens.

L97 ANSWER 3 OF 16 MEDLINE on STN DUPLICATE 3
AB Recently we noted (Hollak, C.E.M., van Weely, S., van Oers, M.H.J., and Aerts, J.M.F.G. (1994) J. Clin. Invest. 93, 1288-1292) that the clinical manifestation of Gaucher disease is associated with a several hundred-fold increase in chitotriosidase activity in plasma. We report on the purification and characterization of the protein. Two major isoforms of chitotriosidase with isoelectric points of 7.2 and 8.0 and molecular masses of 50 and 39 kDa, respectively, were purified from the spleen of a Gaucher patient. The N-terminal amino acid sequence of the two forms proved to be identical. An antiserum raised against the purified 39-kDa chitotriosidase precipitated all isozymes. Chitotriosidase activity was earlier found to be completely absent in some individuals. These findings in combination suggest that a single gene may encode the different isoforms of chitotriosidase. Both the N-terminal sequence and an internal sequence chitotriosidase proved to be homologous to sequences in proteins that are members of the chitinase family (Hakala, B.E., White,C., and Recklies, A.D. (1993) J. Biol. Chem. 268, 25803-25810). The **human chitotriosidase** described here showed chitinolytic activity toward artificial substrates as well as chitin and may therefore be considered to be a chitinase.

L97 ANSWER 4 OF 16 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 4
AB We have used the **human** respiratory pathogen, Coccidioides immitis, as an experimental model to explore possible interrelationships of wall-associated hydrolases, cell growth, and reproduction. Preliminary evidence has been presented that suggests that certain wall hydrolases (glucanase, **chitinase**) may play key roles in cell development in this systemic pathogen. Initial differentiation of the parasitic cells from cylindrical arthroconidia involves a period of isotropic growth and results in formation of a multinucleate spherule (approximately 60 mu m diameter). An endo-1,3-beta-glucanase that may participate in this diametric growth phase has been isolated. Two distinct **chitinase** genes (cts1, cts2) have been isolated from C. immitis and shown to be members of different classes of this wall hydrolase. The class I **chitinase** (CTS2) demonstrates homology to a reported endochitinase of Saccharomyces cerevisiae that has been shown to be essential for yeast daughter cell release. CTS2 may play a pivotal role in isotropic growth, as well as differentiation and release of endospores from maternal spherules. In the absence of specific gene disruption and transformation experiments, these data are still circumstantial evidence for the functions of wall hydrolases in C. immitis development. However, we suggest our results provide further support for the concept that wall hydrolases represent rational molecular targets for future development of novel **antifungal** agents.

L97 ANSWER 5 OF 16 MEDLINE on STN DUPLICATE 5
AB We examined the reactivity of **human** sera with recombinant microfilarial **chitinase** and with the antigenic determinant on the native parasite molecule identified by monoclonal antibody (MAb) MF1. In Brugian filariasis, the MF1 epitope is preferentially recognized by residents of endemic areas who remain amicrofilaremic and asymptomatic despite lifelong exposure to filarial worms. Reactivity with filarial chitinase and its MF1 epitope inversely correlates with microfilaremia levels in Bancroftian filariasis and is associated with a prolonged amicrofilaremic state following a single course of treatment with diethylcarbamazine. Chitinase does not appear to be a target of human antibodies that promote the adherence of cells to microfilariae, even though MAb MF1 itself promotes antibody-dependent, cell-mediated cytotoxic (ADCC) reactions that kill microfilariae in vitro. Such ADCC reactions are most often mediated by sera from amicrofilaremic patients with chronic elephantiasis that contain low or undetectable levels of IgG antibodies to chitinase. In contrast, antibodies to the MF1 epitope on this microfilarial stage-specific antigen are mostly present in amicrofilaremic donors without clinical lymphatic disease. These observations indicate that antibodies to the MF1 epitope of microfilarial chitinase reflect some degree of immune resistance to microfilaremia in a subgroup of patients with asymptomatic lymphatic filariasis. The amicrofilaremic state of individuals with chronic lymphatic disease appears to be mediated by reactivity to a different parasite antigen(s).

L97 ANSWER 6 OF 16 MEDLINE on STN DUPLICATE 6
AB Porphyromonas gingivalis has been implicated in human periodontal diseases. It expresses a number of exoglycosidase enzymes capable of hydrolysing host proteoglycan residues. As a first stage to explore the role of these enzymes in periodontal tissue damage, the nahA gene of P. gingivalis W83, which encodes beta-N-acetylhexosaminidase (beta-Nahase), was cloned. The gene was expressed poorly in Escherichia coli, but increased expression was achieved by cloning the nahA gene downstream of the tac promoter. Southern blot analysis revealed that nahA was present as a single copy, and it was found in all the other P. gingivalis strains tested. In contrast, sequences homologous to nahA were not detected in either P. endodontalis or P. asaccharolytica. The nahA gene was 2331 bp long and encoded a beta-Nahase enzyme of 777 amino acids with a predicted molecular mass of 87 kDa. A characteristic signal peptide for an acylated

lipoprotein was present at the amino-terminus, suggesting that the mature beta-Nahase is a lipoprotein. The predicted amino acid sequence of the P. gingivalis beta-Nahase shared homology with the catalytic domains of the **human** beta-Nahase enzyme and the **chitinase** of Vibrio harveyi, suggesting a common catalytic mechanism.

L97 ANSWER 7 OF 16 MEDLINE on STN DUPLICATE 7
AB Since 1988 an endoglucosaminidase, provisionally named MU-TACT hydrolase, has been known that hydrolyses the artificial substrate 4-methylumbelliferyl-tetra-N-acetyl-chitotetraoside (MU-[GlcNAc]4, where GlcNAc is N-acetylglucosamine). The biological function of the enzyme was unknown. In this paper evidence is presented showing that this endoglucosaminidase from **human** serum is in fact a **chitinase** that is different from lysozyme. The facts sustaining this finding are: (i) the identification of the products formed from MU-[GlcNAc]3 and [GlcNAc]2;and [GlcNAc]3; (ii) chitin and ethylene glycolchitin can be degraded by the enzyme; (iii) the chitinase inhibitor allosamidin also inhibits the action of MU-TACT hydrolase from human serum; (iv) no hydrolysis of the lysozyme substrate Micrococcus lysodeikticus. The enzyme also occurs in rat liver. It was demonstrated that upon Percoll density gradient centrifugation the enzyme from this tissue distributed parallel to the lysosomal marker enzymes beta-N-acetylhexosaminidase and beta-galactosidase, indicating a lysosomal localization for this enzyme. It is proposed that the enzyme functions in the hydrolysis of chitin, to which mammals are frequently exposed during infection by pathogens.

L97 ANSWER 8 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN

L97 ANSWER 9 OF 16 HCAPLUS COPYRIGHT 2003 ACS on STN
AB The parasitic cycle of Coccidioides immitis is unique among the **human** systemic fungal pathogens. However, at the level of cell wall biosynthesis and modification, C. immitis demonstrates features which are shared by other fungal pathogens. Three distinct events in the morphogenesis of parasitic cells, or spherules, of Coccidioides are examd. These include the diametric growth phase of round cells (young spherules), spherule segmentation, and endosporulation. Three enzymic products of developing spherules were suggested to participate in regulation of these successive morphogenetic stages of C. immitis. Preliminary evidence is presented that a .beta.-1,3-endoglucanase contributes to plasticization of the round cell wall, and consequently plays a role in diametric expansion of young spherules. Results of earlier studies of a 34-kDa proteinase are reviewed which suggest that this wall-assocd. enzyme may function in development of the segmentation wall. Data from recent studies of a 100-kDa **chitinase** are presented which suggest that this enzyme participates in endosporulation of the parasitic cells. Morphogenetic studies of Coccidioides may lead to the identification of regulatory factors which are common to other pathogenic fungi, and thereby, to the characterization of mol. targets for development of future **antifungal** reagents.

L97 ANSWER 10 OF 16 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 8

L97 ANSWER 11 OF 16 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN DUPLICATE 9
AB Culture filtrates and autolysates of Coccidioides immitis have provided suitable crude antigens for the serodiagnosis and prognosis of coccidioidomycosis. One of these, a heat-labile antigen which participates in the immunodiffusion reaction corresponding to the complement fixation reaction (IDCF), has been characterized as a 110-kDa native protein that, when subjected to reducing conditions and heat, yields a 48-kDa component. The present report provides serologic and biochemical evidence that this antigen is a chitinase. This chitinase, isolated from 48-h culture filtrate of the spherule-endospore-phase C. immitis by affinity adsorption to chitin, formed a line of identity with the IDCF reference antigen and

participated in the complement fixation reaction with human serum. It lost its enzymatic as well as antigenic activity when heated, but when not heated it retained its enzymatic activity even when precipitated with coccidioidal antibody present in **human** serum. This **chitinase** represents a significant serodiagnostic substance and may be important in the morphogenesis of C. immitis.

L97 ANSWER 12 OF 16 SCISEARCH COPYRIGHT 2003 THOMSON ISI on STN
AB We have isolated from seeds of Mirabilis jalapa L. two antimicrobial peptides, designated Mj-AMP1 and Mj-AMP2, respectively. These peptides are highly basic and consist of 37 and 36 residues for Mj-AMP1 and Mj-AMP2, respectively. Both peptides contain three disulfide bridges and differ from one another only by 4 amino acids. Sodium dodecyl sulfate-polyacrylamide gel electrophoresis analysis of the reduced and unreduced peptides suggests that the peptides associate into dimers in their native form. The Mj-AMPs exhibit a broad spectrum of **antifungal** activity since they are active against all 13 tested plant pathogenic fungi. Concentrations required for 50% inhibition of fungal growth vary from 6 to 300-mu-g/ml for Mj-AMP1 and from 0.5 to 20-mu-g/ml for Mj-AMP2. These peptides were also active on two tested Gram-positive bacteria but were apparently nontoxic for Gram-negative bacteria and cultured **human** cells. Although the Mj-AMPs show sequence similarity to mu-agatoxins, a class of insecticidal neurotoxic peptides isolated from the venom of spiders, they do not affect pulse transmission in insect nerves.

L97 ANSWER 13 OF 16 LIFESCI COPYRIGHT 2003 CSA on STN
AB Plants do not contain an immune system and must rely on other mechanisms to protect themselves from fungal infection. Included among the defense mechanisms are inducible and constitutive enzymes whose functions appear to be growth inhibition of parasitic invaders. Many of these enzymes act by synthesizing inhibitory compounds, such as phytoalexins, phenols, lignins, tannins, and melanins. Other enzymes appear capable of acting directly on fungi to inhibit growth. We have been studying three classes of these directly inhibitory enzymes: ribosome-inactivating proteins, **chitinases**, and glucanases. This report describes experiments using **antifungal** enzymes from grains, alone and in combination with **antifungal** drugs, to inhibit growth of the important **human** pathogenic fungi.

L97 ANSWER 14 OF 16 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC. on STN
AB The production of different enzymes of 2 strains of C. coronatus, 1 isolated from insects and another from a **human** case of rhinoentomophthoromycosis, was observed. **Chitinase**, protease, hemolysin, DNase and lipase were studied. The enzymes were present in both strains with the exception of chitinase; there was no chitinolytic activity present in these strains. The velocity of growth and diameter of the colony were always greater from the insect strain.

L97 ANSWER 15 OF 16 MEDLINE on STN
AB Mixtures of mycolytic enzymes from various sources release protoplasts from living fungal tissue under suitable conditions. Such enzyme mixtures obtained from Coprinus comatus (mycolase I), Physarum polycephalum (mycolase II) and Lycoperdon pyriforme (mycolase III) are of low toxicity in **mammals** when given parenterally and are able to cure experimental systemic fungal infections in mice when administered alone or in conjunction with normally ineffective levels of conventional antimycotic drugs such as amphotericin B. The effect is believed to be due to enzymic degradation of the fungal cell wall either killing the fungus directly or enhancing activity of existing **antifungal** agents by increasing access to the cell interior.

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DUPLICATE 10

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